

ABSTRACT OF THE DISCLOSURE

A noise suppression circuit for a communications channel (12) comprises a noise reference extraction device (14), for example a hybrid transformer or circuit, for
5 extracting from an input signal (S) a reference signal (N_{CM}) corresponding to a noise component in the input signal and supplying the noise reference signal to a noise estimation unit (16) which derives therefrom a noise estimate (Y_j) which is subtracted from the input signal to produce a noise-suppressed output signal (D_{OUT}). The noise suppression circuit comprises a first analog-to-digital converter (24) for digitizing the
10 input signal at a first sampling rate (F_s) and a second analog-to-digital converter for sampling the noise reference signal (N_{CM}) at a second, lower sampling rate (F_s/M), the ratio (M) between the two sampling rates being an integer. A decimator (40) decimates the input signal to produce a decimated signal ($D_j + N_j$). An adaptive filter (34) produces a noise estimate signal (Y'_j) that is subtracted from the decimated signal to produce an
15 error signal (ϵ_j) which is used by adaptive filter (34) to adjust its coefficients. An interpolator (36) interpolates the interim noise estimate signal (Y'_j) by the same integer (M) to provide a noise estimate signal (Y_j) which is subtracted from a digitized and delayed version of the input signal to produce the noise-suppressed output signal (D_{OUT}).

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